

Section 3-7: Solve Inequalities

By the end of this lesson, you should be able to answer:

- How do you solve and graph inequalities on a number line?
- How do you solve problems involving inequalities?

Where you might see this in the real world:

- Communications, health, fitness, hobbies, safety, business

Define the following terms:

1. Solve an inequality
2. Addition property of inequality
3. Multiplication and division properties of inequality

Solving inequalities is much like solving an equation. The inequality sign takes the place of the equals sign, and we follow the same process as we did with equations.

Example 1: Solve and graph each inequality.

a. $7 - n \leq 5$

b. $13x - 4 > 22$

c. $-4x \geq 16$

d. $-2x + 3 \leq 8$

***Notice that when we divide or multiply by a negative number, we have to switch the sign. To remember this remember this rule:

Just like we could work with real world situations with equations, we can do so with inequalities as well.

Example 2: Matt Mitarnowski's Rentals charges \$39 per day, plus \$.42 per mile driven. If Fuzzy Jeff rents a car for one day, what possible distances can he drive and keep his total rental charge to a maximum of \$80?

Homework:

"Behold the turtle. He makes progress only when he sticks his neck out." - James Bryant Conant